

Tra-Con Tra-Cast 3107 Low Shrinkage Epoxy Casting System

Category : Polymer , Adhesive , Thermoset , Epoxy

Material Notes:

TRA-CAST 3107 is a versatile epoxy casting system developed for high performance production potting, encapsulating, casting and tooling applications where low shrinkage, easy handling and flowability, and excellent mechanical and electrical properties are required. This formulation has a good pot life and low exotherm properties, and cure at room temperature to a tough, rigid, solid with very low shrinkage characteristics and excellent dimensional stability over a wide temperature range. TRA-CAST 3107 adheres to rigid plastics and laminates, metals, and ceramics, has a low coefficient of thermal expansion, and is readily machined and shaped with ordinary shop tools. The fully cured epoxy system is an excellent electrical insulator which provides good resistance to electrolysis, leakage, and corrosion from water, weather, gases and vapors, and from chemical compounds including mild acids and alkalis, many corrosive salts and salt solutions, petroleum product and lubricants, and other organic and inorganic materials. Information provided by Tra-Con Inc.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Tra-Con-Tra-Cast-3107-Low-Shrinkage-Epoxy-Casting-System.php

Physical Properties	Metric	English	Comments
Specific Gravity	1.59 g/cc	1.59 g/cc	Mixed
Volatile Organic Compounds (VOC) Content	11.62 g/l	11.62 g/l	
Water Absorption	0.0010 %	0.0010 %	After 24 hours
Viscosity	22500 cP @Temperature 25.0 °C	22500 cP @Temperature 77.0 °F	Mixed (sp #6, 10 rpm)

Mechanical Properties	Metric	English	Comments
Hardness, Shore D	85	85	24 hrs @ 25°C
	87	87	4 hrs @ 25°C + 2 hrs @ 65°C
Tensile Strength, Yield	56.5 MPa	8200 psi	
Elongation at Yield	2.0 %	2.0 %	
Compressive Strength	74.5 MPa	10800 psi	
Adhesive Bond Strength	17.9 MPa	2600 psi	Lap shear, alum to alum, 4 hrs @ 25°C + 2 hrs @ 65°C
	19.7 MPa	2850 psi	Lap shear, alum to alum, 24 hrs @ 25°C

Thermal Properties	Metric	English	Comments
CTE, linear	66.7 µm/m-°C	37.1 µin/in-°F	Below Tg

Thermal Properties	183 $\mu\text{m}/\text{m}^\circ\text{C}$ Metric	102 $\mu\text{m}/\text{in}^\circ\text{F}$ English	Above Tg Comments
Maximum Service Temperature, Air	125 °C	257 °F	
Minimum Service Temperature, Air	-70.0 °C	-94.0 °F	
Glass Transition Temp, Tg	63.0 °C	145 °F	Ultimate Tg

Electrical Properties	Metric	English	Comments
Volume Resistivity	4.80e+15 ohm-cm	4.80e+15 ohm-cm	
Dielectric Constant	4.2	4.2	
	@Frequency 1000 Hz	@Frequency 1000 Hz	
Dielectric Strength	16.1 kV/mm	410 kV/in	
Dissipation Factor	0.010	0.010	
	@Frequency 1000 Hz	@Frequency 1000 Hz	

Processing Properties	Metric	English	Comments
Cure Time	360 min	6.00 hour	4 hrs @ 25°C + 2 hrs @ 65°C
	1440 min	24.0 hour	
	@Temperature 25.0 °C	@Temperature 77.0 °F	
Pot Life	60 min	60 min	25 grams
	90 min	90 min	100 grams

Descriptive Properties	Value	Comments
Color	Black	
Mix Ratio, parts by weight	100/50	Resin/Hardener
Thixotropic Index	1.7	10 rpm/100 rpm
Working Life hours	2	100 grams

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